

REMARKS

The Official Action mailed September 10, 2003, has been received and its contents carefully noted. Filed concurrently herewith is a *Request for One Month Extension of Time*, which extends the shortened statutory period for response to January 12, 2004. Accordingly, the Applicant respectfully submits that this response is being timely filed.

The Applicant notes with appreciation the consideration of the Information Disclosure Statements filed on January 13, 2000, April 27, 2000, June 9, 2000, January 31, 2001, July 5, 2001, August 15, 2001, October 15, 2001, January 9, 2002, June 7, 2002, and July 9, 2002. However, the Applicant has not received acknowledgment of the Information Disclosure Statements filed on January 3, 2001 (see below, received by OIPE on January 5, 2001), and filed on July 24, 2003 (received by OIPE on July 25, 2003). The Applicant respectfully requests that the Examiner provide an initialed copy of the Form PTO-1449 evidencing consideration of the Information Disclosure Statements filed January 3, 2001, and July 24, 2003.

At page 8 of the Official Action, it is noted that the Applicant awaits consideration of the Information Disclosure Statement filed January 3, 2001. However, the Official Action states that "the Examiner did not receive any IDS filed 1/3/01" and "requests another copy of the IDS filed on 1/3/01" (Paper No. 30). The Applicant respectfully submits that an IDS was properly filed on January 3, 2001, as evidenced by the attached copy of the Information Disclosure Statement, Form PTO-1449 filed January 3, 2001, and the post card acknowledging receipt of the IDS by OIPE on January 5, 2001, which are provided as a courtesy to the Examiner. It is noted that a typographical error appears on the Form PTO-1449 of the above-referenced IDS. Specifically, 10-104659 and 10-233511 are Japanese (JP) references and not European (EP) references. The Applicant's representative has corrected this matter on the copy of the Form PTO-1449 provided with the present response. It is unclear whether the Examiner has received the references cited in the above-referenced IDS. If there are any particular references

that cannot be located by the Examiner from the above-referenced IDS, the Applicant requests that such references be identified in a subsequent communication.

The Applicant notes the citation of JP 08-264784 to Kurokawa and a "partial English translation of Japanese patent application no. 08-264784 from the Japanese Patent Office" in the Form PTO-892 mailed October 8, 2002 (Part of Paper No. 23). The Applicant respectfully requests whether the Examiner has a full English translation of JP 8-264784 to Kurokawa. If so, the Applicant respectfully requests a copy of any such full English translation of Kurokawa.

Claims 13-17 and 46-82 are pending in the present application, of which claims 13, 46, 51, 55, 60 and 64 are independent. Claims 13-15, 46-48, 51-53, 55-57, 60, 61 and 64-66 have been amended for clarity and to correct minor typographical and grammatical errors. For the reasons set forth in detail below, all claims are believed to be in condition for allowance. Favorable reconsideration is requested. The Applicant notes with appreciation the indication of the allowability of claims 46-50, 70 and 76.

The Official Action objects to the disclosure asserting that "it is unclear why regions 316 to 319, 326 and 327 ... 334 and 335 are n⁻-type impurity regions" (page 2, Paper No. 30). The Applicant respectfully disagrees. The Applicant notes that n⁻-type impurity regions 316 to 319, 326, 327, 334 and 335 designate all the regions between the channel formation region such as the region 311 and the n⁻-type impurity regions such as the regions 320 and 321, including both the shaded region and the unshaded region. The shading is used just for showing a change of impurity concentration, not necessarily for showing borders between doped regions and undoped regions. The impurity could be doped in all the regions between the channel formation region and the n⁻-type impurity regions which is not overlapped with the lower conductive layer of the gate electrode, or could be doped in a part of the regions, as shown in Figs. 4A to 4D. Therefore, the Applicant believes that it is not necessary to correct the drawings. Reconsideration of the objection is requested.

The Official Action objects to claims 13-17, 46-54, 69-71, 75, 76 and 82 because of various informalities in claim 13, at lines 6-7, in claim 46, at line 8, and in claim 51, at lines 6-7. In response, the Applicant has amended claims 13, 46 and 51 for clarity. The Applicant has also taken this opportunity to correct minor typographical and grammatical errors in claims 13-15, 46-48, 51-53, 55-57, 60, 61 and 64-66. The amendments are merely clarifying in nature, and should not in any way affect the scope of protection afforded the claims for infringement purposes, particularly under the Doctrine of Equivalents. It is not believed that these amendments raise any new issues that would require further consideration or search and thus are believed to be appropriate for entry after final. The Applicant respectfully submits that claims 13, 46 and 51 are clear and definite as amended. Accordingly, reconsideration and withdrawal of the objections are in order and respectfully requested.

The Official Action rejects claims 13, 15-17, 51, 53-55, 57-60, 62-64, 66-69, 71-74, 81 and 82 as obvious based on the combination of JP 06-148685 to Nakazono et al. and JP 08-264784 to Kurokawa. The Official Action rejects dependent claims 14, 52, 56, 61 and 65 as obvious based on the combination of Nakazono, Kurokawa and U.S. Patent No. 4,394,182 to Maddox, III. The Official Action rejects dependent claims 75 and 77-80 as obvious based on the combination of Nakazono, Kurokawa and U.S. Patent No. 6,114,715 to Hamada. The Applicant respectfully traverses the rejections because the Official Action has not made a *prima facie* case of obviousness.

As stated in MPEP §§ 2142-2143.01, to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some

teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. “The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art.” In re Kotzab, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000). See also In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); In re Jones, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

Also, MPEP § 2142 states that the examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness. It is respectfully submitted that the Official Action has failed to carry this burden. While the Official Action relies on various teachings of the cited prior art to disclose aspects of the claimed invention and asserts that these aspects could be used together, it is submitted that the Official Action does not adequately set forth why one of skill in the art would combine the references to achieve the present invention.

There is no suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify Nakazono and Kurokawa or to combine reference teachings to achieve the claimed invention. The Official Action concedes that Nakazono does not teach that “each of the first and second thin film transistors comprises the first conductive layer having a pair of tapered portions, which extend beyond side edges of the second conductive layer” and that “the pair of lightly doped regions has a pair of first portions, which are overlapped by the pair of the tapered portions of the first conductive layer, and a pair of second portions, which extend beyond side edges of the first conductive layer, and wherein the impurity concentration in the pair of first portions is smaller than the impurity concentration in the pair of second portions” (pages 3-4, Paper No. 30). The Official Action relies on Kurokawa to allegedly teach all of the above features missing from Nakazono. The Official Action asserts that “it would have been obvious to have the gate electrode

structure and the lightly doped regions of Kurokawa in each of the thin film transistors of Nakazono et al." since both Nakazono and Kurokawa allegedly teach an insulated gate electrode having two conductive layers and a pair of lightly doped regions, and "because they prolong the life of the transistor and restrain the short channel effect" (page 4, *Id.*). The Applicant respectfully disagrees and traverses the assertion in the Official Action.

Although Kurokawa appears to teach a pair of second portions of the lightly doped regions which extend beyond side edges of the first conductive layer, the second portions are formed by using SiO₂ films (*e.g.* 26) as masks. As such, the second portions and the SiO₂ films are inseparably related. It is unclear how or why one of ordinary skill in the art would have been motivated to combine the device of Nakazono with Kurokawa, when the Kurokawa device includes SiO₂ films as masks.

Even assuming motivation could be found, the Official Action has not given any indication that one with ordinary skill in the art at the time of the invention would have had a reasonable expectation of success when combining Nakazono and Kurokawa.

The Applicant further contends that even assuming, *arguendo*, that the combination of Nakazono and Kurokawa is proper, there is a lack of suggestion as to why a skilled artisan would use the proposed modifications to achieve the unobvious advantages first recognized by the Applicant. The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination.

Maddox and Hamada do not cure the deficiencies in the motivation to combine Nakazono and Kurokawa. The Official Action relies on Maddox to allegedly teach that "an angle between the tapered portions of the gate electrode and the gate insulating film is less than 60 degrees" (page 7, *Id.*) and on Hamada to allegedly teach that "an active matrix display device is an electroluminescent display device" (page 8, *Id.*). Maddox and Hamada do not show how or why one of ordinary skill in the art would have been

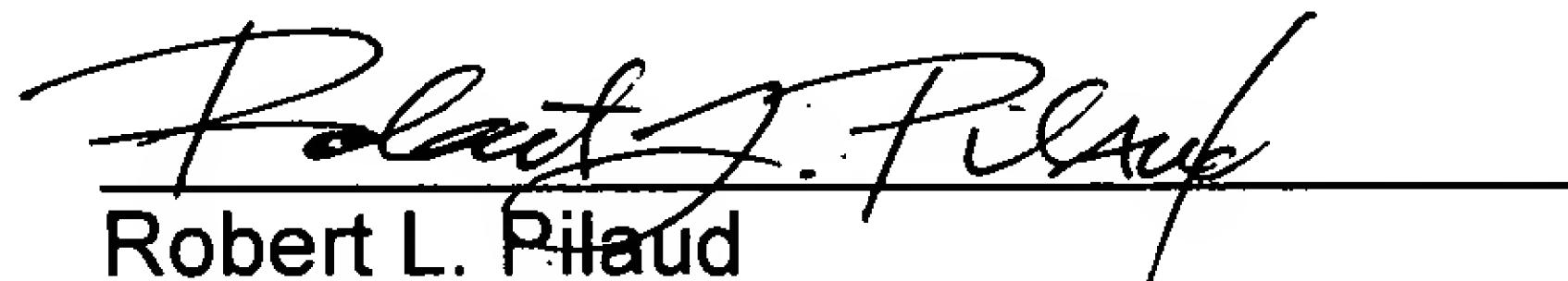
motivated to combine the device of Nakazono with Kurokawa, when the Kurokawa device includes SiO₂ films as masks.

In the present application, it is respectfully submitted that the prior art of record, alone or in combination, does not expressly or impliedly suggest the claimed invention and the Official Action has not presented a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references.

For the reasons stated above, the Official Action has not formed a proper *prima facie* case of obviousness. Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. § 103(a) are in order and respectfully requested.

Should the Examiner believe that anything further would be desirable to place this application in better condition for allowance, the Examiner is invited to contact the Applicant's undersigned attorney at the telephone number listed below.

Respectfully submitted,



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